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Jun 14, 2000

DERWENT-ACC-NO: 2000-258123

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TITLE: Use of an alkali-free silicon, magnesium and heavy alkaline earth metal oxide mixture as a high thermal expansion coefficient glass-ceramic joint material, especially for high temperature fuel cells

INVENTOR: DURSCHANG, B R

PRIORITY-DATA: 1998DE-1057057 (December 10, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>EP 1008563 A1</u>	June 14, 2000	G	000	C03C010/00
DE 19857057 C1	April 13, 2000		006	C03C010/00

INT-CL (IPC): C03 C 3/091; C03 C 8/24; C03 C 10/00; H01 M 2/08; H01 M 8/02

ABSTRACTED-PUB-NO: DE 19857057C

BASIC-ABSTRACT:

NOVELTY - Use of an alkali-free silicon, magnesium and heavy alkaline earth metal oxide mixture, for a high thermal expansion coefficient glass-ceramic joint material, is new.

DETAILED DESCRIPTION - An alkali-free oxide mixture, containing 35-55% SiO₂, 20-50% MgO and at least 5% total (not more than 15% each) of one or more of CaO, SrO and BaO, is used as a glass-ceramic joint material or for producing such a material having a thermal expansion coefficient of at least 10 multiply 10⁻⁶ K⁻¹ for high temperature use.

USE - Used as a joint material in a high temperature fuel cell (claimed) or more generally as a glass-ceramic solder for joining metals, alloys and/or other materials having a thermal expansion coefficient (at 20-950 deg. C) of about 12 multiply 10⁻⁶ K⁻¹.

~~ADVANTAGE~~ - The material has a high temperature of use (up to at least 950 deg. C, especially up to 1100 deg. C), a uniform thermal expansion coefficient of at least 10 multiply 10⁻⁶ K⁻¹ (especially 12 multiply 10⁻⁶ K⁻¹) and good insulating properties.